

10/25/2021

Pine Bluff Wastewater Utility
Mr. Vincent Miles
900 Island Harbour Marina Rd.
Pine Bluff, AR 71602

Ref: Analytical Testing
Report Number: 21-278-0390
Client Project Description: Bioassay
Quarterly - 4
AR0033316

Dear Permittee:

The results of this WET (Whole Effluent Toxicity) test are acceptable according to test review criteria. There were no significant deficiencies found in sample handling, test performance, or reporting. The test results are within the limits established by your NPDES permit and were entered into the permittee's records in the database.

Results:	<i>Ceriodaphnia dubia</i> NOEL = 12 %	CV = 18.30 %	PMSD = 16.2 %
	Fathead Minnow NOEL = 12 %	CV = 15.30 %	PMSD = 25.1 %

Permit Limit: Critical Dilution = 9 %
Maximum Coefficient of Variation (CV) < 40 %

EPA Methods: 1002.0 *Ceriodaphnia dubia* Survival and Reproduction
1000.0 *Pimephales promelas* Larval Survival and Growth

All statistical interpretations generated by CETIS - Comprehensive Environmental Toxicity Information System (v.1.9.1.4). CETIS created by Tidepool Scientific Software

Respectfully,



Blake Smith
Lab Supervisor

CETIS Test Evaluation Report

Report Date: 22 Oct-21 14:08 (1 of 1)
 Test Code: 21-278-0390-cd | 00-1886-2891

Facility: Pine Bluff Wastewater Utility
 Sample Site:
 Sample Code: 21-278-0390
 Sample Date: 04 Oct-21 08:55
 Sample Age: 26h (2.1 °C)
 Project: WET Quarterly Compliance Test (4Q)

Permittee: Pine Bluff Wastewater Utility
 Address: 1520 South Ohio Street
 Pine Bluff, AR 71601-6055

Contact: Mr. Vincent Miles
 Phone: 870-535-6603
 Email: Vincent@pbwastewater.com

Test Name: **Ceriodaphnia 7-d Survival and Reproduction Test**
 Organism: Ceriodaphnia dubia (Water Flea)
 Protocol: EPA/821/R-02-013 (2002)
 Start Date: 05 Oct-21 11:20
 End Date: 12 Oct-21 11:02
 Duration: 7d **Organism Age: <24**

Laboratory: Waypoint Analytical Tennessee , LLC.
 Address: 2790 Whitten Road
 Memphis, TN 38133

Contact: Mrs. Blake Smith, Lab Supervisor
 Phone: 901-271-5200, 901-213-2440(fax)
 Email: Bsmith@wpcorp.com

Comments:

Chronic Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	12/>12	8.99	Passes IWC	Fisher Exact/Bonferroni-Holm Test
Reproduction	NOEL/LOEL	12/>12	8.99	Passes IWC	Bonferroni Adj t Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
Reproduction	Control Resp	41.4	15	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	1	1	1	1	1	0	0	0.00%	0.0%
4		10	1	1	1	1	1	0	0	0.00%	0.0%
5		10	1	1	1	1	1	0	0	0.00%	0.0%
7		10	1	1	1	1	1	0	0	0.00%	0.0%
9		10	1	1	1	1	1	0	0	0.00%	0.0%
12		10	1	1	1	1	1	0	0	0.00%	0.0%

Reproduction Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	41.4	38.62	44.18	28	48	2.395	7.575	18.30%	0.0%
4		10	44.2	42.2	46.2	35	54	1.724	5.453	12.34%	-6.76%
5		10	46.3	44.16	48.44	37	56	1.844	5.832	12.60%	-11.84%
7		10	42.6	41.12	44.08	35	49	1.275	4.033	9.47%	-2.9%
9		10	41.8	40.17	43.43	34	49	1.405	4.442	10.63%	-0.97%
12		9	39.44	36.41	42.48	23	46	2.754	8.263	20.95%	4.72%

CETIS Summary Report

Report Date: 22 Oct-21 14:08 (p 1 of 2)
 Test Code: 21-278-0390-cd | 00-1886-2891

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 04-3557-3778 Test Type: Reproduction-Survival (7d) Analyst: Chase M. Featherston
 Start Date: 05 Oct-21 11:20 Protocol: EPA/821/R-02-013 (2002) Diluent: 20% DMW
 Ending Date: 12 Oct-21 11:02 Species: Ceriodaphnia dubia Brine: Not Applicable
 Duration: 7d Source: In-House Culture Age: <24

Sample ID: 08-6975-2912 Code: 21-278-0390 Client: Pine Bluff Wastewater Utility
 Sample Date: 04 Oct-21 08:55 Material: POTW Effluent Project: WET Quarterly Compliance Test (4Q)
 Receipt Date: 05 Oct-21 09:20 Source: Pine Bluff Wastewater Utility (AR0033316)
 Sample Age: 26h (2.1 °C) Station:

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-278-0390	05 Oct-21 08:45	07 Oct-21 08:25	07 Oct-21 00:00	2
2	21-278-0390	07 Oct-21 08:45	09 Oct-21 11:20	09 Oct-21 00:00	2.5

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
09-7505-8252	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	12	> 12	n/a	8.333	n/a
10-4064-3938	Reproduction	Bonferroni Adj t Test	12	> 12	n/a	8.333	16.2%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
09-7505-8252	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
10-4064-3938	Reproduction	Control Resp	41.4	15	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
4		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
7		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
9		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
12		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	10	41.4	35.98	46.82	28	48	2.395	7.575	18.30%	0.00%
4		10	44.2	40.3	48.1	35	54	1.724	5.453	12.34%	-6.76%
5		10	46.3	42.13	50.47	37	56	1.844	5.832	12.60%	-11.84%
7		10	42.6	39.71	45.49	35	49	1.275	4.033	9.47%	-2.90%
9		10	41.8	38.62	44.98	34	49	1.405	4.442	10.63%	-0.97%
12		9	39.44	33.09	45.8	23	46	2.754	8.263	20.95%	4.72%

CETIS Summary Report

Report Date: 22 Oct-21 14:08 (p 2 of 2)
Test Code: 21-278-0390-cd | 00-1886-2891

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee , LLC.

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	47	29	39	47	47	47	39	43	48	28
4		54	48	47	42	46	35	48	42	41	39
5		45	37	46	45	43	46	41	55	49	56
7		42	45	49	46	45	35	40	39	44	41
9		42	45	44	38	41	43	45	34	37	49
12		23	43	46	46	43	40		28	41	45

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	L	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
4		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
7		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
9		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
12		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 1 of 3)
Test Code: 21-278-0390-cd | 00-1886-2891

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 04-3557-3778	Test Type: Reproduction-Survival (7d)	Analyst: Chase M. Featherston
Start Date: 05 Oct-21 11:20	Protocol: EPA/821/R-02-013 (2002)	Diluent: 20% DMW
Ending Date: 12 Oct-21 11:02	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 7d	Source: In-House Culture	Age: <24

Sample ID: 08-6975-2912	Code: 21-278-0390	Client: Pine Bluff Wastewater Utility
Sample Date: 04 Oct-21 08:55	Material: POTW Effluent	Project: WET Quarterly Compliance Test (4Q)
Receipt Date: 05 Oct-21 09:20	Source: Pine Bluff Wastewater Utility (AR0033316)	
Sample Age: 26h (2.1 °C)	Station:	

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 2 of 3)
 Test Code: 21-278-0390-cd | 00-1886-2891

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee , LLC.

Total Residual Chlorine-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
4								
5								
7								
9								
12		0	0	1	1	0	0	0

Conductivity-µS/cm

Conc-%	Code	1	2	3	4	5	6	7
0	L	182.5	182.5	185.7	174.4	189.5	183.7	184.4
4								
5								
7								
9								
12		801.8	799.5	839.1	771.5	810.8	805.7	802.1

Final Dissolved Oxygen-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	8.5	8.7	9.8	9.2	8.1	9.3	7.8
4		8.4	8.7	9.8	9.1	8.2	9.2	7.7
5		8.3	8.8	9.8	9.4	8.2	9.5	7.5
7		8.3	8.7	9.9	9.4	8.3	9.6	7.1
9		8.4	8.7	9.8	9.4	8.5	9.6	6.9
12		8.4	8.7	9.8	9.6	8.6	9.9	6.7

Initial Dissolved Oxygen-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.9	8.7	8.3	9.3	9	8.3	8.1
4		7.9	8.7	8.4	9.4	9	8.4	8.3
5		8	8.8	8.3	9.3	8.8	8.4	8.2
7		8	8.7	8.2	9.4	8.8	8.3	8.2
9		8.1	8.7	8.2	9.3	8.7	8.4	8.2
12		8.2	8.6	8.3	9.2	8.6	8.3	8.2

Final pH-Units

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.4	7.6	7.5	7.6	7.6	7.7	7.2
4		7.4	7.6	7.5	7.6	7.7	7.7	7.2
5		7.4	7.7	7.5	7.7	7.7	7.8	7.1
7		7.4	7.7	7.5	7.7	7.8	7.8	7.1
9		7.5	7.7	7.5	7.8	7.8	7.9	7.1
12		7.5	7.7	7.6	7.8	7.8	8	7.1

Initial pH-Units

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.3	7.4	7.5	7.4	7.4	7.5	7.4
4		7.3	7.4	7.5	7.4	7.5	7.5	7.3
5		7.4	7.4	7.5	7.4	7.5	7.5	7.3
7		7.4	7.4	7.5	7.3	7.5	7.5	7.3
9		7.4	7.3	7.5	7.3	7.5	7.6	7.3
12		7.4	7.4	7.5	7.3	7.5	7.6	7.3

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 3 of 3)
Test Code: 21-278-0390-cd | 00-1886-2891

Ceriodaphnia 7-d Survival and Reproduction Test

Waypoint Analytical Tennessee, LLC.

Final Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	24.9	24.9	25.2	24.9	25.3	25.1	25.1
4		25	25.2	25.1	25.1	25.2	25.1	25.2
5		25.1	25.3	25.1	25	25.2	25	25.1
7		24.9	25.3	25.1	25.1	25.2	25	25.1
9		24.9	25.2	25.1	25	25.1	25.1	25.2
12		25	25.2	25	25.2	25.2	25.1	25

Initial Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	24.1	24.1	24.2	24.2	23.3	23.4	23.7
4		24.3	24.4	24.2	24.4	23.3	23.7	23.6
5		24.4	24.4	24.3	24.6	23.4	23.8	23.7
7		24.6	24.5	24.3	24.5	23.4	23.78	23.7
9		24.6	24.6	24.3	24.6	23.3	24	23.8
12		24.8	24.4	24.3	24.6	23.5	24.1	24

CETIS Test Evaluation Report

Report Date: 22 Oct-21 14:08 (1 of 1)
 Test Code: 21-278-0390-fh | 18-3537-9479

Facility: Pine Bluff Wastewater Utility
 Sample Site:
 Sample Code: 21-278-0390
 Sample Date: 04 Oct-21 08:55
 Sample Age: 26h (2.1 °C)
 Project: WET Quarterly Compliance Test (4Q)

Permittee: Pine Bluff Wastewater Utility
 Address: 1520 South Ohio Street
 Pine Bluff, AR 71601-6055

Contact: Mr. Vincent Miles
 Phone: 870-535-6603
 Email: Vincent@pbwastewater.com

Test Name: **Fathead Minnow 7-d Larval Survival and Growth Test**
 Organism: Pimephales promelas (Fathead Minnow)
 Protocol: EPA/821/R-02-013 (2002)
 Start Date: 05 Oct-21 11:06
 End Date: 12 Oct-21 10:29
 Duration: 6d 23h **Organism Age: <24**

Laboratory: Waypoint Analytical Tennessee , LLC.
 Address: 2790 Whitten Road
 Memphis, TN 38133

Contact: Mrs. Blake Smith, Lab Supervisor
 Phone: 901-271-5200, 901-213-2440(fax)
 Email: Bsmith@wpcorp.com

Comments:

Chronic Toxicity Evaluation

Endpoint	Criteria	Conc-%	IWC	Decision	Method
7d Survival Rate	NOEL/LOEL	12/>12	8.99	Passes IWC	Steel Many-One Rank Sum Test
Mean Dry Weight-mg	NOEL/LOEL	12/>12	8.99	Passes IWC	Steel Many-One Rank Sum Test

Test Acceptability Criteria

Endpoint	Attribute	Test Stat	TAC Limits			Decision
			Lower	Upper	Overlap	
7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
Mean Dry Weight-mg	Control Resp	0.41	0.25	>>	Yes	Passes Acceptability Criteria

Mean Dry Weight-mg Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.41	0.387	0.433	0.3625	0.5125	0.02806	0.06275	15.30%	0.0%
4		5	0.4275	0.3937	0.4613	0.3375	0.575	0.04115	0.09202	21.53%	-4.27%
5		5	0.4275	0.4215	0.4335	0.4	0.4375	0.00729	0.0163	3.81%	-4.27%
7		5	0.4675	0.4535	0.4815	0.4125	0.5125	0.01705	0.03812	8.15%	-14.02%
9		5	0.4825	0.4621	0.5029	0.4125	0.55	0.02488	0.05562	11.53%	-17.68%
12		5	0.4875	0.4486	0.5264	0.4125	0.675	0.04743	0.1061	21.76%	-18.9%

7d Survival Rate Data Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	1	1	1	1	1	0	0	0.00%	0.0%
4		5	0.95	0.909	0.991	0.75	1	0.05	0.1118	11.77%	5.0%
5		5	0.95	0.9249	0.9751	0.875	1	0.03062	0.06847	7.21%	5.0%
7		5	1	1	1	1	1	0	0	0.00%	0.0%
9		5	0.95	0.9249	0.9751	0.875	1	0.03062	0.06847	7.21%	5.0%
12		5	1	1	1	1	1	0	0	0.00%	0.0%

CETIS Summary Report

Report Date: 22 Oct-21 14:08 (p 1 of 2)
 Test Code: 21-278-0390-fh | 18-3537-9479

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 11-1297-9094 Test Type: Growth-Survival (7d) Analyst: Chase M. Featherston
 Start Date: 05 Oct-21 11:06 Protocol: EPA/821/R-02-013 (2002) Diluent: 20% DMW
 Ending Date: 12 Oct-21 10:29 Species: Pimephales promelas Brine: Not Applicable
 Duration: 6d 23h Source: Aquatic Biosystems, CO Age: <24

Sample ID: 08-6975-2912 Code: 21-278-0390 Client: Pine Bluff Wastewater Utility
 Sample Date: 04 Oct-21 08:55 Material: POTW Effluent Project: WET Quarterly Compliance Test (4Q)
 Receipt Date: 05 Oct-21 09:20 Source: Pine Bluff Wastewater Utility (AR0033316)
 Sample Age: 26h (2.1 °C) Station:

Sample Renewals

Renewal	Sample Code	Sample Date	Receive Date	Renewal Date	Temp °C
1	21-278-0390	05 Oct-21 08:45	07 Oct-21 08:25	07 Oct-21 00:00	2
2	21-278-0390	07 Oct-21 08:45	09 Oct-21 11:20	09 Oct-21 00:00	2.5

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
06-2376-7897	7d Survival Rate	Steel Many-One Rank Sum Test	12	> 12	n/a	8.333	9.07%
03-9381-9325	Mean Dry Weight-mg	Steel Many-One Rank Sum Test	12	> 12	n/a	8.333	25.1%

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits		Overlap	Decision
				Lower	Upper		
06-2376-7897	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Acceptability Criteria
03-9381-9325	Mean Dry Weight-mg	Control Resp	0.41	0.25	>>	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
4		5	0.9500	0.8112	1.0000	0.7500	1.0000	0.0500	0.1118	11.77%	5.00%
5		5	0.9500	0.8650	1.0000	0.8750	1.0000	0.0306	0.0685	7.21%	5.00%
7		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
9		5	0.9500	0.8650	1.0000	0.8750	1.0000	0.0306	0.0685	7.21%	5.00%
12		5	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	L	5	0.41	0.3321	0.4879	0.3625	0.5125	0.02806	0.06275	15.30%	0.00%
4		5	0.4275	0.3132	0.5418	0.3375	0.575	0.04115	0.09202	21.53%	-4.27%
5		5	0.4275	0.4073	0.4477	0.4	0.4375	0.00729	0.0163	3.81%	-4.27%
7		5	0.4675	0.4202	0.5148	0.4125	0.5125	0.01705	0.03812	8.15%	-14.02%
9		5	0.4825	0.4134	0.5516	0.4125	0.55	0.02488	0.05562	11.53%	-17.68%
12		5	0.4875	0.3558	0.6192	0.4125	0.675	0.04743	0.1061	21.76%	-18.90%

CETIS Summary Report

Report Date: 22 Oct-21 14:08 (p 2 of 2)
Test Code: 21-278-0390-fh | 18-3537-9479

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
4		0.7500	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	0.8750	1.0000	0.8750
7		1.0000	1.0000	1.0000	1.0000	1.0000
9		0.8750	0.8750	1.0000	1.0000	1.0000
12		1.0000	1.0000	1.0000	1.0000	1.0000

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.3625	0.3625	0.425	0.3875	0.5125
4		0.3375	0.45	0.4	0.375	0.575
5		0.425	0.4	0.4375	0.4375	0.4375
7		0.4875	0.475	0.4125	0.5125	0.45
9		0.4125	0.475	0.525	0.45	0.55
12		0.45	0.4125	0.675	0.45	0.45

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	8/8	8/8	8/8	8/8	8/8
4		6/8	8/8	8/8	8/8	8/8
5		8/8	8/8	7/8	8/8	7/8
7		8/8	8/8	8/8	8/8	8/8
9		7/8	7/8	8/8	8/8	8/8
12		8/8	8/8	8/8	8/8	8/8

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 1 of 3)
Test Code: 21-278-0390-fh | 18-3537-9479

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Batch ID: 11-1297-9094	Test Type: Growth-Survival (7d)	Analyst: Chase M. Featherston
Start Date: 05 Oct-21 11:06	Protocol: EPA/821/R-02-013 (2002)	Diluent: 20% DMW
Ending Date: 12 Oct-21 10:29	Species: Pimephales promelas	Brine: Not Applicable
Duration: 6d 23h	Source: Aquatic Biosystems, CO	Age: <24

Sample ID: 08-6975-2912	Code: 21-278-0390	Client: Pine Bluff Wastewater Utility
Sample Date: 04 Oct-21 08:55	Material: POTW Effluent	Project: WET Quarterly Compliance Test (4Q)
Receipt Date: 05 Oct-21 09:20	Source: Pine Bluff Wastewater Utility (AR0033316)	
Sample Age: 26h (2.1 °C)	Station:	

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 2 of 3)
 Test Code: 21-278-0390-fh | 18-3537-9479

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee , LLC.

Total Residual Chlorine-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	0	0	0	0	0	0	0
4								
5								
7								
9								
12		0	0	1	1	0	0	0

Conductivity-µS/cm

Conc-%	Code	1	2	3	4	5	6	7
0	L	182.5	182.5	185.7	174.4	189.5	183.7	184.4
4								
5								
7								
9								
12		801.8	799.5	839.1	771.5	810.8	805.7	802.1

Final Dissolved Oxygen-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.8	7	8.1	7.5	8.2	6.3	6.2
4		7.8	7	8.1	7.4	8.5	6.3	6.5
5		7.9	7.1	7.6	7.6	8.7	6.4	6.8
7		7.9	7.1	8.1	7.7	8.8	6.8	6.9
9		7.9	7.2	7.8	7.6	8.7	7.2	7.3
12		7.9	7.5	7.7	7.8	9.2	7.8	7.4

Initial Dissolved Oxygen-mg/L

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.9	8.7	8.3	9.3	9	8.3	8.1
4		7.9	8.7	8.4	9.4	9	8.4	8.3
5		8	8.8	8.3	9.3	8.8	8.4	8.2
7		8	8.7	8.2	9.4	8.8	8.3	8.2
9		8.1	8.7	8.2	9.3	8.7	8.4	8.2
12		8.2	8.6	8.3	9.2	8.6	8.3	8.2

Final pH-Units

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.1	7	7	7.1	7.3	6.9	6.7
4		7.2	7	7	7.1	7.4	6.9	6.8
5		7.2	7	7	7.2	7.6	6.9	6.8
7		7.3	7.1	7	7.3	7.6	7.1	6.9
9		7.3	7.2	7	7.3	7.7	7.3	7
12		7.4	7.2	7	7.3	7.8	7.4	7

Initial pH-Units

Conc-%	Code	1	2	3	4	5	6	7
0	L	7.3	7.4	7.5	7.4	7.4	7.5	7.4
4		7.3	7.4	7.5	7.4	7.5	7.5	7.3
5		7.4	7.4	7.5	7.4	7.5	7.5	7.3
7		7.4	7.4	7.5	7.3	7.5	7.5	7.3
9		7.4	7.3	7.5	7.3	7.5	7.6	7.3
12		7.4	7.4	7.5	7.3	7.5	7.6	7.3

CETIS Measurement Report

Report Date: 22 Oct-21 14:08 (p 3 of 3)
Test Code: 21-278-0390-fh | 18-3537-9479

Fathead Minnow 7-d Larval Survival and Growth Test

Waypoint Analytical Tennessee, LLC.

Final Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	24.4	24.7	24.5	24.8	24.6	24.7	24.5
4		24.6	24.6	24.6	25.1	24.7	24.7	24.4
5		24.9	24.6	24.5	25	24.6	24.6	24.4
7		24.8	24.9	24.7	25	24.8	24.6	24.5
9		24.6	24.6	24.6	24.9	24.7	24.4	24.3
12		24.8	24.8	24.7	24.7	24.8	24.6	24.6

Initial Temperature-°C

Conc-%	Code	1	2	3	4	5	6	7
0	L	24.1	24.1	24.2	24.2	23.3	23.4	23.7
4		24.3	24.4	24.2	24.4	23.3	23.7	23.6
5		24.4	24.4	24.3	24.6	23.4	23.8	23.7
7		24.6	24.5	24.3	24.5	23.4	23.78	23.7
9		24.6	24.6	24.3	24.6	23.3	24	23.8
12		24.8	24.4	24.3	24.6	23.5	24.1	24

Additional Toxicity Test Information

1. Methods/Instrumentation used in chemical analysis:
 - Dissolved oxygen, DM 4: (SM 4500-O G-2011)
 - pH, PH 21: (SM 4500-H + B-2011)
 - Temperature, T 83
 - Conductivity, C 2: (SM 2510 B-2011)
 - Alkalinity: (SM 2320 B-2011)
 - Hardness: (EPA 200.7 / SM 2340 B-2011)
 - Total Residual Chlorine: (SM 4500-CL G-2011)
 - Reported value of “0” indicates result below detection limit of 0.02 mg/L
 - Reported value of “1” indicates result above detection limit of 0.02 mg/L
 - EPA Acute Manual Edition and Date: EPA-821-R-02-012, OCT 2002 (Fifth edition)
 - EPA Chronic Manual Edition and Date: EPA-821-R-02-013, OCT 2002 (Fourth edition)
2. Laboratory
 - Incubator Temperature: 25± 1°C
 - Incubator ID: BIO Thermometer ID: 120554
 - Sample Temperature: 25± 3°C
 - Sample Temperatures are read after the organisms have been transferred and counted.
 - Depending on temperature of laboratory and time spent on organisms the temperature of the sample may drop below limits. However, the organisms are maintained at 25± 3°C
 - Light Cycle: 16 hours light/ 8 hours dark
 - Light intensity: 50-100 foot-candles, average
 - Control (Dilution) Water: Dilute mineral water made with 20 % Perrier in Nanopure (20%DMW)
 - Maintained in the incubator at 25± 1°C
 - Pretreatment: none
3. Method 1002.0 *Ceriodaphnia dubia* Survival and Reproduction
 - Test chambers: 30 mL disposable plastic beakers
 - Volume per chamber: 15 mL
 - Number of organisms per chamber: 1
 - Number of replicates: 10
 - Food: *Ceriodaphnia dubia* are fed 0.15mL *Raphidocelis subcapitata* (Algae) and YTC solution daily.
 - Acclimation of organisms: In house cultures are raised at 25°C. Purchased organisms are allowed to reach 25°C prior to use.
4. Method 1000.0 *Pimephales promelas* (Fathead minnow) Larval Survival and Growth
 - Test chambers: 20 oz. Disposable plastic cups
 - Volume per chamber: 250 mL
 - Average number of organisms per chamber: 8
 - Number of replicates per concentration: 5
 - Food: Fathead minnows are fed 0.15 mL *Artemia* brine shrimp hatched in laboratory twice daily
 - Acclimation of organisms: Dilution water is added until organisms are contained in a culture media that consists of 80% dilution water. Organisms are allowed to reach 25°C prior to use.
5. Reference Toxicity
 - Reference toxicity tests are performed monthly on each method performed by the laboratory.
 - Potassium Chloride is used as the reference toxicity chemical for vertebrate species
 - Current chemical ID: CS 6156984
 - Sodium Chloride is used as the reference toxicity chemical for invertebrate species
 - Current chemical ID: CS 6163731
6. Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate, etc. and the justification for such manipulations or deviations. Attach additional pages as needed.
 - None

03326

Pine Bluff Wastewater Utility
 Mr. Ken Johnson
 900 Island Harbour Marina Rd.
 Pine Bluff , AR 71602

Project Bioassay
 Information :

Report Date : 10/25/2021

Report Number : **21-278-0390**

REPORT OF ANALYSIS

Received : 10/05/2021

Lab No : **96703**

Matrix: **Aqueous**

Sample ID : **Outfall 001 - Composite 1**

Sampled: **10/3/2021 8:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	182	mg/L	1	1	10/15/21 11:18	JAE	2320B-2011
Calcium	14.8	mg/L	0.500	1	10/22/21 20:38	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	50.3	mg/L	0.100	1	10/22/21 20:38		EPA-200.7
Magnesium	3.25	mg/L	0.100	1	10/22/21 20:38	TJS	EPA-200.7

Lab No : **96704**

Matrix: **Aqueous**

Sample ID : **Outfall 001 - Composite 2**

Sampled: **10/5/2021 8:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	184	mg/L	1	1	10/18/21 10:00	JAE	2320B-2011
Calcium	14.7	mg/L	0.500	1	10/22/21 20:43	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	50.0	mg/L	0.100	1	10/22/21 20:43		EPA-200.7
Magnesium	3.23	mg/L	0.100	1	10/22/21 20:43	TJS	EPA-200.7

Lab No : **96705**

Matrix: **Aqueous**

Sample ID : **Outfall 001 - Composite 3**

Sampled: **10/7/2021 8:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Alkalinity (as CaCO ₃)	178	mg/L	1	1	10/18/21 10:00	JAE	2320B-2011
Calcium	14.7	mg/L	0.500	1	10/22/21 20:48	TJS	EPA-200.7
Hardness as CaCO ₃ (SM-2340B)	50.1	mg/L	0.100	1	10/22/21 20:48		EPA-200.7
Magnesium	3.25	mg/L	0.100	1	10/22/21 20:48	TJS	EPA-200.7

**Qualifiers/
Definitions**

DF Dilution Factor
 MQL Method Quantitation Limit

L Limit Exceeded



#1

Kit ID:	152947
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY

21-278-0390
 03326
 10-05-2021
 11:02:01
 Pine Bluff Wastewater Utility
 Bioassay

Company Name Pine Bluff Wastewater Utility	Company Number 03326	Client Project Manager/Contact Pine Bluff Wastewater Utility	Purchase Order Number 50005
Site Name QTR 4 A - Bioassay - 10/03-04/2021	Project Number	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
LIMS Project ID Pine Bluff - Bioassay	Project Manager Phone # (870) 535-0821	Project Manager Email vincent@pbwastewater.com	Site/Facility ID #

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
10/3/21	0855	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
10/3/21	0855	Outfall 001 - Composite 1	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
10/3/21	0855	Outfall 001 - Composite 1	Aqueous	C	2	Plastic - Quart	NONE	Chronic CD/FH

For Laboratory Use Only			Sampled by (Name - Print)	Client Remarks/Comments				
Ice Y/N	Custody Seals Y/N	Lab Comments Blank/Cooler Temp 2.1°C T137 H2	Jornetta Shaw					
			Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
			Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
			Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time



#2

Kit ID:	152948
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY



21-278-0390
 03326
 10-05-2021
 11:02:01

Company Name Pine Bluff Wastewater Utility	Company Number 03326	Client Project Manager/Contact Pine Bluff Wastewater Utility	Purchase Order Number 50005
Site Name QTR 4 B - Bioassay - 10/05-06/2021	Project Number	<input type="checkbox"/> RUSH - Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
LIMS Project ID Pine Bluff - Bioassay	Project Manager Phone # (870) 535-0821	Project Manager Email vincent@pbwastewater.com	Site/Facility ID #

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
10/5/21	0845	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
10/5/21	0845	Outfall 001 - Composite 2	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
10/5/21	0845	Outfall 001 - Composite 2	Aqueous	C	42	Plastic - Quart	NONE	Chronic CD/FH

For Laboratory Use Only			Sampled by (Name - Print)		Client Remarks/Comments			
Ice	Custody Seals	Lab Comments	Najarad Jasper					
Y/N	Y/N		Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
			Relinquished by: (SIGNATURE)	Date Time	Received by: (SIGNATURE)	Date Time		
Blank/Cooler Temp 2.0 T102 mm			Page 17 of 31		M. Weaver 10/7/21 0825			



Kit ID:	152949
Initiated By:	Sydney Andres
Initiated Date:	2/9/2021
Project Comment	Pine Bluff Bioassay

CHAIN-OF-CUSTODY

Company Name	Company Number	Client Project Manager/Contact	Purchase Order Number
Pine Bluff Wastewater Utility	03326	Pine Bluff Wastewater Utility	50005
Site Name	Project Number	<input type="checkbox"/> RUSH – Additional charges apply <input type="checkbox"/> Special Detection Limits(s) Date Results Needed	Method of Shipment <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off Other
QTR 4 C - Bioassay - 10/07-08/2021			
LIMS Project ID	Project Manager Phone #	Project Manager Email	Site/Facility ID #
Pine Bluff - Bioassay	(870) 535-0821	vincent@pbwastewater.com	

Date	Time	Sample ID	Matrix	Grab/Comp	# of Cont	Container Type	Preservation	Analyses
10/7/21	0845	Outfall 001 - Composite 3	Aqueous	C	1	Plastic - Pint	NONE	alkalinity
10/7/21	0845	Outfall 001 - Composite 3	Aqueous	C	1	Plastic - Pint	HNO3 - Nitric Acid	hardness
10/7/21	0845	Outfall 001 - Composite 3	Aqueous	C	3	Plastic - Quart	NONE	Chronic CD/FH

21-278-0390
 03326
 10-05-2021
 11:02:01
 Pine Bluff Wastewater Utility
 Bioassay / 10/5/21/10/7/21

For Laboratory Use Only			Sampled by (Name - Print)	Client Remarks/Comments				
Ice	Custody Seals	Lab Comments	Najarad Jasper					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
			Relinquished by: (SIGNATURE)					
			Relinquished by: (SIGNATURE)					
Blank/Cooler Temp								
2.5 T137								
SLH								

NAME: Pine Bluff Wastewater Utility
ADDRESS:

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMIT NUMBER
AR0033316

DISCHARGE NUMBER

FACILITY:
LOCATION:
ATTN:

MONITORING PERIOD

YEAR	MONTH	DAY	TO	YEAR	MONTH	DAY
2021						

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS
P/F STATRE 7DAY CHR CERIODAPHNIA TGP3B 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	*****	(9A)
	PERMIT REQUIREMENT							PASS=0 FAIL=1

P/F STATRE 7DAY CHR PIMEPHALES PROMELAS TGP6C 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	*****	(9A)
	PERMIT REQUIREMENT							PASS=0 FAIL=1

LF P/F LETH STATRE 7-DAY CHR CERIODAPHNIA TLP3B 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	*****	(9A)
	PERMIT REQUIREMENT							PASS=0 FAIL=1

LF P/F LETH STATRE 7-DAY CHR PIMEPHALES TLP6C 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	0	*****	(9A)
	PERMIT REQUIREMENT							PASS=0 FAIL=1

NOEL LETHAL STATRE 7-DAY CHR CERIODAPHNIA TOP3B 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	12	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

NOEL LETHAL STATRE 7-DAY CHR PIMEPHALES TOP6C 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	12	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

NAME: Pine Bluff Wastewater Utility
 ADDRESS:

0
0

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER
AR0033316

DISCHARGE NUMBER
0

FACILITY:
 LOCATION:
 ATTN:

MONITORING PERIOD

YEAR	MONTH	DAY	TO	YEAR	MONTH	DAY
2021	0	0			0	0

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS
NOEL SUB-LTH STATRE 7DAY CHR CERIODAPHNIA TPP3B 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	12	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

NOEL SUB-LTH STATRE 7DAY CHR PIMEPHALES TPP6C 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	12	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

COEF OF VAR STATRE 7DAY CHR CERIODAPHNIA TQP3B 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	18.3	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

COEF OF VAR STATRE 7DAY CHR PIMEPHALES TQP6C 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	*****	15.3	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

WHOLE EFFLUENT TOXICITY 22414 S 0 0	SAMPLE MEASUREMENT	*****	*****	*****	12	*****	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

WHOLE EFFLUENT TOXICITY 22414 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	*****	12	*****	*****	(23)
	PERMIT REQUIREMENT							PER-CENT

Sample ID: PineBluff Date/Time Start: 10/5/2021 11:20 Analyst: CF

Report # 21-278-0390 Date/Time End: 10/12/2021 11:02 Analyst: IM

Data Entered By: 10/21/21 IM Data Reviewed By: BS 10/22/21
date / initial date / initial

Method 1002.0 - Ceriodaphnia dubia Survival and Reproduction Data

Conc. % EFF	Day #	1	2	3	4	5	6	7	8	9	10	Total live young	# live Adults	Young per Live adult	
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	7 DAYS ✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	9	4	7	8	9	6	7	6	9	5	70	10	7.0	
	5	3	8	14	17	15	13	14	8	15	9	116	10	11.6	
	6	11	0	0	0	0	0	1	0	2	0	14	10	1.4	
	7	24	17	18	22	23	27	18	27	24	14	214	10	21.4	
Replicate Totals	---	47	29	39	47	47	47	39	43	48	28	Avg. Yng/ adult=	41.40	% Coeff	18.30
32	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	10	10	7	8	8	6	6	7	5	7	74	10	7.4	
	5	18	17	18	17	15	10	16	0	14	7	132	10	13.2	
	6	0	0	0	0	0	0	0	14	0	0	14	10	1.4	
	7	26	21	22	17	23	19	26	21	22	25	222	10	22.2	
Replicate Totals	---	54	48	47	42	46	35	48	42	41	39	Avg. Yng/ adult=	44.20	% Coeff	12.34
42	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	7	9	8	7	9	8	6	8	8	6	76	10	7.6	
	5	14	13	17	14	16	14	12	21	17	19	157	10	15.7	
	6	0	0	1	0	0	0	0	0	0	0	1	10	0.1	
	7	24	15	20	24	18	24	23	26	24	31	229	10	22.9	
Replicate Totals	---	45	37	46	45	43	46	41	55	49	56	Avg. Yng/ adult=	46.30	% Coeff	12.60
56	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	9	10	7	7	8	7	7	8	6	7	76	10	7.6	
	5	13	12	19	11	15	6	11	9	13	13	122	10	12.2	
	6	0	2	0	1	3	2	0	0	0	0	8	10	0.8	
	7	20	21	23	27	19	20	22	22	25	21	220	10	22.0	
Replicate Totals	---	42	45	49	46	45	35	40	39	44	41	Avg. Yng/ adult=	42.60	% Coeff	9.47
75	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	7	7	7	9	6	8	7	6	6	9	72	10	7.2	
	5	13	16	15	7	17	15	19	2	9	14	127	10	12.7	
	6	0	0	0	0	0	0	0	14	0	2	16	10	1.6	
	7	22	22	22	22	18	20	19	12	22	24	203	10	20.3	
Replicate Totals	---	42	45	44	38	41	43	45	34	37	49	Avg. Yng/ adult=	41.80	% Coeff	10.63
100	1	0	0	0	0	0	0	0	0	0	0	0	10	0.0	✓
	2	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	3	0	0	0	0	0	0	0	0	0	0	0	10	0.0	
	4	8	8	7	9	10	7	0	4	8	8	69	10	6.9	
	5	0	13	14	16	17	14	0	9	13	19	115	10	11.5	
	6	15	0	0	0	0	0	0	0	0	0	15	10	1.5	
	7	0	22	25	21	16	19	0	15	20	18	156	10	15.6	
Replicate Totals	---	23	43	46	46	43	40	0	28	41	45	Avg. Yng/ adult=	35.50	% Coeff	41.43

Parameters for control acceptability:

- the average number of live adults must be >= 80 %
- the average number a young per live adult must be >= 15.
- 60 % of the controls must produce 3 broods.

#s represent the number of young per live organism.
 X represents death of the organism.
 M represents a missing organism.

Sample ID: PineBluff Date/Time Start: 10/5/2021 11:06 Analyst: CF

Report # 21-278-0390 Date/Time End: 10/12/21 10:29 Analyst: CF

Data Entered By: 10/21/21 IM Data Reviewed By: BS 10/22/21
 date / initial date / initial

Method 1000.0 - *Pimephales promelas* (Fathead Minnow) Survival and Growth Data

Conch % EFF	REP	DAY								Proportion Survival	Avg. Dry Wt. surviving org (mg)	Avg. Dry Wt. original org (mg)	initial weight	final weight
		0	1	2	3	4	5	6	7					
Control	A	8	8	8	8	8	8	8	8	1.00	0.363	0.363	27.9158	27.9187
	B	8	8	8	8	8	8	8	8	1.00	0.363	0.363	29.7871	29.7900
	C	8	8	8	8	8	8	8	8	1.00	0.425	0.425	29.6239	29.6273
	D	8	8	8	8	8	8	8	8	1.00	0.387	0.387	31.2809	31.2840
	E	8	8	8	8	8	8	8	8	1.00	0.513	0.513	32.3638	32.3679

Mean proportion survival = 1.00

Mean average weight (original organisms) mg = 0.4100 Survival % COEF = 0.00

Mean average weight (surviving organisms) mg = 0.4100 Growth % COEF = 15.30

32	A	8	8	7	7	7	7	6	6	0.75	0.338	0.338	23.2810	23.2837
	B	8	8	8	8	8	8	8	8	1.00	0.450	0.450	29.4465	29.4501
	C	8	8	8	8	8	8	8	8	1.00	0.400	0.400	25.5509	25.5541
	D	8	8	8	8	8	8	8	8	1.00	0.375	0.375	23.8804	23.8834
	E	8	8	8	8	8	8	8	8	1.00	0.575	0.575	30.9412	30.9458

Mean proportion survival = 0.95

Mean average weight (original organisms) mg = 0.4275 Survival % COEF = 11.77

Growth % COEF = 21.53

42	A	8	8	8	8	8	8	8	8	1.00	0.425	0.425	27.0732	27.0766
	B	8	8	8	8	8	8	8	8	1.00	0.400	0.400	24.8789	24.8821
	C	8	8	8	8	7	7	7	7	0.88	0.437	0.437	32.4027	32.4062
	D	8	8	8	8	8	8	8	8	1.00	0.437	0.437	33.2242	33.2277
	E	8	8	8	8	8	8	7	7	0.88	0.438	0.438	27.0325	27.0360

Mean proportion survival = 0.95

Mean average weight (original organisms) mg = 0.4275 Survival % COEF = 7.21

Growth % COEF = 3.81

56	A	8	8	8	8	8	8	8	8	1.00	0.487	0.487	31.0989	31.1028
	B	8	8	8	8	8	8	8	8	1.00	0.475	0.475	27.3416	27.3454
	C	8	8	8	8	8	8	8	8	1.00	0.412	0.412	31.1025	31.1058
	D	8	8	8	8	8	8	8	8	1.00	0.512	0.512	25.4353	25.4394
	E	8	8	8	8	8	8	8	8	1.00	0.450	0.450	29.4307	29.4343

Mean proportion survival = 1.00

Mean average weight (original organisms) mg = 0.4675 Survival % COEF = 0.00

Growth % COEF = 8.15

75	A	8	8	8	8	7	7	7	7	0.88	0.412	0.412	29.2316	29.2349
	B	8	8	8	8	7	7	7	7	0.88	0.475	0.475	33.8072	33.8110
	C	8	8	8	8	8	8	8	8	1.00	0.525	0.525	31.3782	31.3824
	D	8	8	8	8	8	8	8	8	1.00	0.450	0.450	33.9334	33.9370
	E	8	8	8	8	8	8	8	8	1.00	0.550	0.550	27.2442	27.2486

Mean proportion survival = 0.95

Mean average weight (original organisms) mg = 0.4825 Survival % COEF = 7.21

Growth % COEF = 11.53

100	A	8	8	8	8	8	8	8	8	1.00	0.450	0.450	28.7232	28.7268
	B	8	8	8	8	8	8	8	8	1.00	0.412	0.412	33.5660	33.5693
	C	8	8	8	8	8	8	8	8	1.00	0.675	0.675	30.1022	30.1076
	D	8	8	8	8	8	8	8	8	1.00	0.450	0.450	30.5698	30.5734
	E	8	8	8	8	8	8	8	8	1.00	0.450	0.450	35.2617	35.2653

Mean proportion survival = 1.00

Mean average weight (original organisms) mg = 0.4875 Survival % COEF = 0.00

Growth % COEF = 21.76

Parameters for control acceptability:

- the mean proportion survival must be $\geq 80\%$
- the mean average weight must be $\geq 0.250\text{mg}$

Waypoint Analytical, LLC.
READINGS DATA SHEET FOR 7-DAY CHRONIC TESTING

SAMPLE ID: Pine Bluff

Report Number: 21-278-0390

Date test started: 10/5/21

	DAY							
		1	2	3	4	5	6	7
INITIAL READINGS	pH CTRL	7.3	7.4	7.5	7.4	7.4	7.5	7.4
	Initial R							
	1	7.3	7.4	7.5	7.4	7.5	7.5	7.3
	2	7.4	7.4	7.5	7.4	7.5	7.5	7.3
	3	7.4	7.4	7.5	7.3	7.5	7.5	7.3
	4	7.4	7.3	7.5	7.3	7.5	7.6	7.3
	5	7.4	7.4	7.5	7.3	7.5	7.6	7.3
	DO CTRL	7.9	8.7	8.3	9.3	9.0	8.3	8.1
	Initial (mg/L) R							
	1	7.9	8.7	8.4	9.4	9.0	8.4	8.3
	2	8.0	8.8	8.3	9.3	8.8	8.4	8.2
	3	8.0	8.7	8.2	9.4	8.8	8.3	8.2
	4	8.1	8.7	8.2	9.3	8.7	8.4	8.2
	5	8.2	8.6	8.3	9.2	8.1	8.3	8.2
	Temp CTRL	24.1	24.1	24.2	24.2	23.3	23.4	23.7
Initial (°C) R								
1	24.3	24.4	24.2	24.4	23.3	23.7	23.6	
2	24.4	24.4	24.3	24.6	23.4	23.8	23.7	
3	24.6	24.5	24.3	24.5	23.4	23.8	23.7	
4	24.6	24.6	24.3	24.6	23.3	24.0	23.8	
5	24.8	24.4	24.3	24.6	23.5	24.1	24.0	
ANALYST:	CF	CF	CF	CF	BS	W	CF	
DATE:	10/5/21	10/6/21	10/7/21	10/8/21	10/9/21	10/10/21	10/11/21	

	DAY							
		1	2	3	4	5	6	7
CERIODAPHNIA DUBIA READINGS	pH - CD CTRL	7.4	7.6	7.5	7.8	7.6	7.7	7.2
	After 24 hrs. R							
	1	7.4	7.6	7.5	7.8	7.7	7.7	7.2
	2	7.4	7.7	7.5	7.7	7.7	7.8	7.1
	3	7.4	7.7	7.5	7.7	7.8	7.8	7.1
	4	7.5	7.7	7.5	7.8	7.8	7.9	7.1
	5	7.5	7.7	7.6	7.8	7.8	8.0	7.1
	DO - CD CTRL	8.5	8.7	9.8	9.2	8.1	9.3	7.8
	After 24 hrs. R							
	1	8.4	8.7	9.8	9.1	8.2	9.7	7.7
	2	8.3	8.8	9.8	9.4	8.2	9.5	7.5
	3	8.3	8.7	9.9	9.4	8.3	9.6	7.1
	4	8.4	8.7	9.8	9.4	8.5	9.6	6.9
	5	8.4	8.7	9.8	9.6	8.6	9.9	6.7
	Temp CTRL	24.9	24.9	25.2	24.9	25.3	25.1	25.1
After 24 hrs (°C)R								
1	25.0	25.2	25.1	25.1	25.2	25.1	25.2	
2	25.1	25.3	25.1	25.0	25.2	25.0	25.1	
3	24.9	25.3	25.1	25.1	25.2	25.0	25.1	
4	24.9	25.2	25.1	25.0	25.1	25.1	25.2	
5	25.0	25.2	25.0	25.2	25.2	25.1	25.0	
ANALYST:	CF	CF	CF	BS	CF	W	CF	
DATE:	10/6/21	10/7/21	10/8/21	10/9/21	10/10/21	10/11/21	10/12/21	

READINGS DATA SHEET FOR 7-DAY CHRONIC TESTING

SAMPLE ID: Pine Bluff

Report Number: 21-278-0390

Date test started: 10/5/21

DAY		1	2	3	4	5	6	7
FATHEAD MINNOW READINGS	pH - FH CTRL	7.1	7.0	7.0	7.1	7.3	6.9	6.7
	After 24 hrs. R							
	1	7.2	7.0	7.0	7.1	7.4	6.9	6.8
	2	7.2	7.0	7.0	7.2	7.6	6.9	6.8
	3	7.3	7.1	7.0	7.3	7.6	7.1	6.9
	4	7.3	7.2	7.0	7.3	7.7	7.3	7.0
	5	7.4	7.2	7.0	7.3	7.8	7.4	7.0
	DO - FH CTRL	7.8	7.0	8.1	7.5	8.2	6.3	6.2
	After 24 hrs. R							
	1	7.8	7.0	8.1	7.4	8.5	6.3	6.5
	2	7.9	7.1	7.6	7.6	8.7	6.4	6.8
	3	7.9	7.1	8.1	7.7	8.8	6.8	6.9
	4	7.9	7.2	7.8	7.6	8.7	7.2	7.3
	5	7.9	7.5	7.7	7.8	9.2	7.8	7.4
	Temp CTRL	24.4	24.7	24.5	24.8	24.6	24.7	24.5
After 24 hrs (°C)R								
1	24.6	24.6	24.6	25.1	24.7	24.7	24.4	
2	24.9	24.6	24.5	25.0	24.6	24.6	24.4	
3	24.8	24.9	24.7	25.0	24.8	24.4	24.5	
4	24.6	24.6	24.6	24.9	24.7	24.4	24.3	
5	24.8	24.8	24.7	24.7	24.8	24.6	24.6	
ANALYST:	CF	CF	CF	BS	IW	CF	IW	
DATE:	10/5/21	10/6/21	10/7/21	10/9/21	10/10/21	10/11/21	10/12/21	

Conductivity (µS/cm)

INITIAL READINGS	Initial CTRL	182.5	182.5	185.7	174.4	189.5	183.7	184.4	
	R			830.1					
	100%	801.8	799.5	1600.2	776.5	810.8	805.7	802.1	
	INITIAL:	CF	CF	CF	CF	BS	IW	IW	
	DATE:	10/5/21	10/6/21	10/7/21	10/8/21	10/9/21	10/10/21	10/11/21	
	Total Residual Chlorine DL = 0.02mg/L								
	Initial CTRL	20.02		20.02		20.02			
	R								
	100%	20.02		70.02		20.02			
	INITIAL:	CF		IW		BS			
DATE:	10/5/21		10/7/21		10/9/21				
DPD Cl2 Reagent	21-Reag- 0251		21-Reag- 0251		21-Reag- 0251				

Comments / Observations:

Tests are maintained at 25 ± 1 ° C
Incubator ID: BIO Thermometer ID: 120554

Meter	ID
pH	PH 21
Conductivity	C 2
DO	DM4
Temp.	T83

Waypoint Analytical, LLC.
CERIODAPHNIA SURVIVAL AND REPRODUCTION DATA

SAMPLE ID: Pine Bluff

TEST START - DATE/TIME: 10/5/21 1120 ANALYST: CF

REPORT #: 21-278-0390

TEST END - DATE/TIME: 10/12/21 1102 ANALYST: LM

ORGANISM REF#: 21-REAG- 0017

RANDOMIZING KEY #: 6

ANALYST: CF

CONC.	REPLICATE										INITIALS	DATE	
	DAY	1	2	3	4	5	6	7	8	9			10
1	1	0	0	0	0	0	0	0	0	0	0	CF	10/6/21
	2	0	0	0	0	0	0	0	0	0	0	CF	10/7/21
	3	0	0	0	0	0	0	0	0	0	0	CF	10/8/21
	4	9	4	7	7	8	8	7	4	6	7	BS	10/9/21
	5	13	8	19	11	15	15	11	9	9	7	lw	10/10/21
	6	0	0	0	1	3	0	0	0	0	0	lw	10/11/21
	7	20	17	23	27	19	20	22	15	22	25	lm	10/12/21
2	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	0	0	0	CF	
	4	8	7	7	9	8	7	7	6	5	7	BS	
	5	0	16	14	7	15	14	14	8	14	13	lw	
	6	15	0	0	0	0	0	0	2	0	0	lw	
	7	0	22	25	22	23	19	18	27	22	21	lw	
3	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	0	0	0	CF	
	4	7	9	8	9	6	6	7	8	6	9	BS	
	5	13	13	17	16	17	13	19	9	13	14	lw	
	6	0	0	1	0	0	1	0	0	0	2	lw	
	7	22	15	20	21	18	27	19	22	25	24	lm	
4	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	0	0	0	CF	
	4	7	10	7	8	9	7	6	10	8	8	BS	
	5	14	12	15	17	16	6	12	2	17	19	lw	
	6	0	2	0	0	0	2	0	14	0	0	lw	
	7	24	21	22	17	18	20	23	12	24	18	lm	
5	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	0	0	0	CF	
	4	9	8	7	7	9	6	6	7	8	5	BS	
	5	3	13	14	14	15	10	16	0	13	9	lw	
	6	11	0	0	0	0	0	0	14	0	0	lw	
	7	24	22	18	24	23	19	26	21	20	14	lm	
6	1	0	0	0	0	0	0	0	0	0	0	CF	
	2	0	0	0	0	0	0	0	0	0	0	CF	
	3	0	0	0	0	0	0	0	0	0	0	CF	
	4	10	10	7	8	10	8	0	8	9	6	BS	
	5	18	17	18	17	17	14	0	21	15	19	lw	
	6	6	0	0	0	0	0	0	0	0	0	lw	
	7	26	21	22	22	16	24	0	26	24	31	lw	

WAYPOINT ANALYTICAL, LLC.
 TEST TRACEABILITY RECORD
7-DAY CERIODAPHNIA DUBIA

SAMPLE ID: Pine Bluff REPORT # 21-278-0390

DATE START: 10/5/21 DATE END: 10/12/21

CERIODAPHNIA DUBIA REFERENCE # 21-REAG-0017

Neonates obtained from: Brood Tray ID: Monday / Tuesday / Wednesday (A) / B
 (circle) Brood Tray Set: Y / T / P / B / (O) / G

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	ALGAE	YCT
CHRONIC	10/5/21	CF	0	21-REAG-4403	21-REAG-4404
	10/6/21	CF	1	21-REAG-4623	21-REAG-4404
	10/7/21	IW	2	21-REAG-4623	21-REAG-4624
	10/8/21	CF	3	21-REAG-4623	21-REAG-4624
	10/9/21	BS	4	21-REAG-4623	21-REAG-4624
	10/10/21	IW	5	21-REAG-4623	21-REAG-4624
	10/11/21	IW	6	21-REAG-4623	21-REAG-4624

	TEST DAY	CONTROL WATER	SAMPLE LAB ID
(Comp. 1)	0	21-REAG-4609	4596
	1	21-REAG-4611	196703
(Comp. 2)	2	21-REAG-4652	L 96704
	3	21-REAG-4654	I
(Comp. 3)	4	21-REAG-4668/4688	L 96705
	5	21-REAG-4689	I
	6	21-REAG-4694	I

COMMENTS: YCT is filtered with 60 - micron mesh to remove additional debris.
 Organisms are fed 0.15 mL Algae and YCT daily after renewal.
 Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:

If an organisms did not produce any broods, check under microscope for sex of organism.
 Annotate the Concentration and Replicate of organism that is MALE:

6-7
BS 10/22/21

10/12

Organism Gender Log

	Male Characteristics	Check if observed	Female Characteristics	Check if observed
Size and overall shape:	Small		Large	X
	Quadrangular		Roundish / Oval	
Eyes:	Large		Small	
Head:	Not fully depressed		Depressed to body	
Fenestra:	Distinct	X	Not distinct	
Brood chamber:	None	X	Visible on anterior border	
Clasper on second appendage:	Long and thin, curving to a small hook		None	
Abdonminal appendage:	None		Present	
Determination:	Male	X	Female	

Date/ Time Reviewed: 10/12/21 1642
 Analyst: IW/BS
 Report Number: 21-278-0390
 Sample ID: Pine Bluff
 Organism Ref. Number: ~~0017~~ BS
21 Reag 0017

Sample Concentration: 60
 Organism Replicate: 7
 Microscope ID: MZ

	Male Characteristics	Check if observed	Female Characteristics	Check if observed
Size and overall shape:	Small		Large	
	Quadrangular		Roundish / Oval	
Eyes:	Large		Small	
Head:	Not fully depressed		Depressed to body	
Fenestra:	Distinct		Not distinct	
Brood chamber:	None		Visible on anterior border	
Clasper on second appendage:	Long and thin, curving to a small hook		None	
Abdonminal appendage:	None		Present	
Determination:	Male		Female	

Date/ Time Reviewed: _____
 Analyst: _____
 Report Number: _____
 Sample ID: _____
 Organism Ref. Number: _____

Sample Concentration: _____
 Organism Replicate: _____
 Microscope ID: _____

WAYPOINT ANALYTICAL, LLC.
CERIODAPHNIA RANDOMIZATION TRANSLATION

RANDOMIZING KEY #: 6 REPORT # 21-278-0390
 TEST CONCENTRATIONS: 1: Control 2: 4 3: 5 4: 7 5: 9 6: 12

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
1	4	1	4	4	4	5	4	6	5	2

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
2	6	5	6	5	2	6	1	1	2	4

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
3	5	3	3	6	5	1	5	4	4	5

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
4	3	4	5	2	3	4	3	5	3	6

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
5	1	6	1	3	1	2	2	2	6	1

Row	REPLICATE									
	1	2	3	4	5	6	7	8	9	10
6	2	2	2	1	6	3	6	3	1	3

Waypoint Analytical, LLC.
TEST DATA SHEET FOR FATHEAD MINNOW SURVIVAL (7-DAY)

SAMPLE ID: Pine Bluff REPORT #: 21-278-0390

TEST START - DATE/TIME: 10/5/21 1106 ANALYST: CF

TEST END - DATE/TIME : 10/12/21 1029 ANALYST: CF

NOTE: PER ADEQ REQUIREMENTS THE INTIAL NUMBER OF FISH PER REPLICATE MUST BE 8 !!

CONC.	REP NO.	NO. OF SURVIVORS									REMARKS
		DAY									
		0	1	2	3	4	5	6	7		
1	12 A	8	8	8	8	8	8	8	8	8	
	C B	8	8	8	8	8	8	8	8	8	
	9 C	8	8	8	8	7	7	7	7	7	
	7 D	8	8	8	8	8	8	8	8	8	
	5 E	8	8	8	8	8	8	8	8	8	
2	7 A	8	8	8	8	8	8	8	8	8	
	4 B	8	8	7	7	7	7	6	6	6	
	5 C	8	8	8	8	8	8	8	8	8	
	C D	8	8	8	8	8	8	8	8	8	
	12 E	8	8	8	8	8	8	8	8	8	
3	12 A	8	8	8	8	8	8	8	8	8	
	7 B	8	8	8	8	8	8	8	8	8	
	4 C	8	8	8	8	8	8	8	8	8	
	9 D	8	8	8	8	7	7	7	7	7	
	9 E	8	8	8	8	8	8	8	8	8	
4	12 A	8	8	8	8	8	8	8	8	8	
	9 B	8	8	8	8	8	8	8	8	8	
	C C	8	8	8	8	8	8	8	8	8	
	5 D	8	8	8	8	7	7	7	7	7	
	4 E	8	8	8	8	8	8	8	8	8	
5	89c A	8	8	8	8	8	8	8	8	8	
	12 B	8	8	8	8	8	8	8	8	8	
	7 C	8	8	8	8	8	8	8	8	8	
	4 D	8	8	8	8	8	8	8	8	8	
	5 E	8	8	8	8	8	8	8	8	8	
6	C A	8	8	8	8	8	8	8	8	8	
	4 B	8	8	8	8	8	8	8	8	8	
	5 C	8	8	8	8	8	8	7	7	7	
	7 D	8	8	8	8	8	8	8	8	8	
	9 E	8	8	8	8	8	8	8	8	8	
INITIALS		CF	CF	lw	CF	BS	lw	lw	CF		
DATE		10/5/21	10/6/21	10/7/21	10/8/21	10/9/21	10/10/21	10/11/21	10/12/21		

ORGANISM REF#: 21-REAG-4622

COMMENTS:

WAYPOINT ANALYTICAL, LLC.
TEST TRACEABILITY RECORD
7-DAY FATHEAD MINNOW

SAMPLE ID: Pine Bluff REPORT # 21-278-0390

DATE START: 10/5/21 DATE END: 10/12/21

FATHEAD MINNOW REFERENCE # 21-REAG-4622

REFERENCE NUMBERS

PARAMETER	DATE	INITIALS	TEST DAY	CONTROL WATER	BRINE SHRIMP	SAMPLE LAB ID:	
CHRONIC	10/5/21	CF	0	21-REAG-4609	21-REAG-4596	96703	(Comp. 1)
	10/6/21	CF	1	21-REAG-4611	21-REAG-4612	↓	
	10/7/21	IW	2	21-REAG-4652	21-REAG-	L96704	(Comp. 2)
	10/8/21	CF	3	21-REAG-4654	21-REAG-4653	↓	
	10/9/21	BS	4	21-REAG-4687	21-REAG-4667	L 96705	(Comp. 3)
	10/10/21	IW	5	21-REAG-4689	21-REAG-4687	↓	
	10/11/21	IW	6	21-REAG-4694	21-REAG-4692	↓	

COMMENTS: Fathead minnows are fed 0.15 mL Artemia Brine Shrimp x2 daily.
Test conducted at 25 ±1 °C Incubator ID: BIO / Thermometer ID: 120554

ANALYST COMMENTS:

FATHEAD MINNOW FINAL WEIGHT SHEET

SAMPLE ID: Pine Bluff

REPORT #: 21-278-0390

INITIAL WEIGHT DATE/TIME: 10/12/21 840

ANALYST: BS

DATE/TIME IN OVEN: 10/12/21 1548 TEMP (°C): 78

ANALYST: CF

DATE/TIME OUT OVEN: 10/13/21 756 TEMP (°C): 77

ANALYST: LM

FINAL WEIGHT DATE/TIME: 10/13/21 1048

ANALYST: CF

Oven ID : 03

Thermometer ID: T49

Balance ID: B12

Temp Range : 50 - 105 °C

	REP ID	CRUC ID	INT WEIGHT (g)	FINAL WEIGHT (g)	# LARV	REMARKS
1	A	tuber	28.7232	28.7268	8	
	B	Bee	27.9158	27.9187	8	
	C	tot	29.2316	29.2349	7	
	D	Col	31.0989	31.1028	8	
	E	345	27.0732	27.0766	8	
2	A	mew	27.3416	27.3454	8	
	B	89	23.2810	23.2837	6	
	C	AR	24.8789	24.8821	8	
	D	IRCS	29.7871	29.7900	8	
	E	.357	33.5660	33.5693	8	
3	A	eye	30.1022	30.1076	8	
	B	pawn	31.1025	31.1058	8	
	C	mDJ	29.4465	29.4501	8	
	D	King#1	33.8072	33.8110	7	
	E	Mo	31.3782	31.3824	8	
4	A	XAlc	30.5698	30.5734	8	
	B	exit	33.9334	33.9370	8	
	C	Oat	29.6239	29.6273	8	
	D	200	32.4027	32.4062	7	
	E	bird	25.5509	25.5541	8	
5	A	4K	31.2809	31.2840	8	
	B	trut	35.2617	35.2653	8	
	C	ben	25.4353	25.4394	8	
	D	CF	23.8804	23.8834	8	
	E	Chill	33.2242	33.2277	8	
6	A	884	32.3638	32.3679	8	
	B	ZT	30.9412	30.9458	8	
	C	Nov.	27.0325	27.0360	7	
	D	Angel	29.4307	29.4343	8	
	E	Kong	27.2442	27.2486	8	

Crucibles must be in the oven a minimum of 6 hours. Immediately after removal from the oven the crucibles must be allowed to cool in the dessicator a minimum of 2 hours.

Comments/Observations: